Claims

1. An information processing apparatus as a recording command apparatus for transmitting a data recording processing request to nodes connected to a network, characterized by comprising:

a rule deciding condition setting unit for setting data for determining whether processing according to the processing request is to be executed in a node that receives the data recording processing request;

a packet generating unit for storing data for determination set by the rule deciding condition setting unit, and for generating a data recording processing request packet that stores data for recording processing; and

a network interface unit for transmitting the packets generated by the packet generating unit.

2. The information processing apparatus according to claim 1, characterized in that:

said rule deciding condition setting unit is configured to execute setting processing for a probability value : α as a description of recording rule deciding condition for use in determining whether the processing according to the processing request is to be executed in a node that receives the data recording processing request; and

said packet generating unit is configured to execute generation processing for packets that store the probability value : α as the description of recording rule deciding condition.

3. The information processing apparatus according to claim 1, characterized by further comprising:

5   a data processing unit for executing FEC encoding processing and interleave processing for data for recording processing; and

said packet generating unit is configured to execute generation processing of a packet in which data

10   processed by the data processing unit is set as a payload.

4. The information processing apparatus according to claim 1, characterized by further

15   comprising:

a data processing unit for executing FEC encoding processing for data for recording processing, wherein the data processing unit is configured to divide the data into p blocks and to execute encoding processing

20   of encoding rate of q/p for converting into q blocks by applying FEC encoding to thus generated p blocks, and wherein;

said rule deciding condition setting unit is configured to set a probability value : α which causes

25   to record data with a recording probability : α as a description of recording rule deciding condition in a node that receives the data recording processing request, and is configured to set the probability value : α so that a relation between the number of return

30   blocks : $q \times \alpha \times n \times \beta$ which is able to be calculated from a return probability : β specified by a reproducing

command apparatus connected to the network, the number of the encoded blocks : q, and the number of network connection nodes : n, and the number of blocks : p becomes the number of return blocks : $q \times \alpha \times n \times \beta$ > the number of blocks : p.

5. An information processing apparatus as a reproducing command apparatus for transmitting a data reproducing processing request to nodes connected to a network, characterized by comprising:

a rule deciding condition setting unit for setting data for determining whether processing according to the processing request is to be executed in a node that receives the data reproducing processing request;

a packet generating unit for storing data for determination set by the rule deciding condition setting unit, and for generating a data reproducing processing request packet that stores data for reproducing processing; and

a network interface unit for transmitting the packets generated by the packet generating unit.

6. The information processing apparatus according to claim 5, characterized in that:

said rule deciding condition setting unit is configured to execute setting processing for a probability value : α as a description of reproducing rule deciding condition for use in determining whether the processing according to the processing request is to be executed in a node that receives the data reproducing processing request; and

the packet generating unit is configured to execute generation processing for packets that store the probability value : α as the description of reproducing rule deciding condition.

7. The information processing apparatus according to claim 5, characterized by further comprising:

a data recovery processing unit for executing de-interleave processing and FEC decoding processing, wherein;

said data recovery processing unit executes the de-interleave processing and the FEC decoding processing for data for reproducing processing extracted from a packet received from a node that receives the data reproducing processing request, and recovers the data.

8. The information processing apparatus according to claim 5, characterized in that:

said data for reproducing processing stored in the node is the data divided into p blocks executed encoding processing of encoding rate of q/p for converting into q blocks by applying FEC encoding to thus generated p blocks, and

said rule deciding condition setting unit is configured to set a probability value : β which causes to return data with a return probability : β as a description of reproducing rule deciding condition in a node that receives the data reproducing processing request, and is configured to set the probability

value : β so that a relation between the number of return blocks : $q \times \alpha \times n \times \beta$ which is able to be calculated from a recording probability : α specified by a recording command apparatus connected to the network, the number of the encoded blocks : q, and the number of network connection nodes : n, and the number of blocks : p becomes the number of return blocks : $q \times \alpha \times n \times \beta >$ the number of blocks : p.

9. An information processing apparatus characterized by comprising:

a data reception unit;

a rule decision processing unit for determining whether data processing based on a data processing request received via the data reception unit is to be executed; and

a data processing unit for executing data processing based on the determination of the rule decision processing unit, wherein;

the rule decision processing unit is configured to execute determination processing for determining whether or not the processing according to the processing request is to be executed based on data for determination included in the data processing request received via the data reception unit.

10. The information processing apparatus according to claim 9, characterized in that:

said data for determination is a probability value as a rule deciding condition descriptor included in a data processing request; and

said rule decision processing unit is configured to determine whether or not the processing according to a processing request is to be executed in accordance with the probability value.

11. The information processing apparatus according to claim 9, characterized in that:

said data for determination is a probability value as a rule deciding condition descriptor included in a data processing request; and

said rule decision processing unit is configured to execute random number generation processing, and to execute determining processing for determining whether or not the processing according to a processing request is to be executed according to a result of comparison between a generated random number and the probability value.

12. The information processing apparatus according to claim 9, characterized in that:

said data for determination is data processing request storing data included in a data processing request; and

said rule decision processing unit is configured to perform hash value calculation processing based on the data processing request storing data, and to execute determining processing for determining whether or not the processing according to a processing request is to be executed according to a result of comparison between a calculated hash value and a setting value set in its own apparatus in advance.

13. A data recording processing method for transmitting a data recording processing request to a plurality of nodes connected to a network, and for

5   executing distributed data recording processing for the plurality of nodes, characterized by comprising:

a rule deciding condition setting step for setting data for determining whether the processing according to the processing request is to be executed in a node

10   that receives the data recording processing request;

a packet generating step storing data for determination set by the rule deciding condition setting step, and for generating a data recording processing request packet that stores the data for

15   recording processing; and

a packet transmitting step for transmitting the packets generated by the packet generating step.

14. The data recording processing method

20   according to claim 13, characterized in that:

said rule deciding condition setting step executes setting processing for a probability value : α as a description of recording rule deciding condition for use in determining whether the processing according

25   to the processing request is to be executed in a node that receives the data recording processing request; and

said packet generating step executes generation processing for packets that store the probability

30   value : α as the description of recording rule deciding condition.

15. The data recording processing method according to claim 13, characterized in that:

said data recording processing method further
5 comprises a data processing unit for executing FEC encoding processing and interleave processing for data for recording processing; and

said packet generating step executes generation processing of a packet in which data processed by the
10 data processing step is set as a payload.

16. The data recording processing method according to claim 13, characterized in that:

said data recording processing method further
15 comprises a data processing step for executing FEC encoding processing for data for recording processing, wherein said data processing step divides the data into p blocks and executes encoding processing of encoding rate of q/p for converting into q blocks by applying
20 FEC encoding to thus generated p blocks; and

said rule deciding condition setting unit sets a probability value : α which causes to record data with a recording probability : α as a description of recording rule deciding condition in a node that
25 receives the data recording processing request, and sets the probability value : α so that a relation between the number of return blocks : $q \times \alpha \times n \times \beta$ which is able to be calculated from a return probability : β specified by a reproducing command apparatus connected
30 to the network, the number of the encoded blocks : q, and the number of network connection nodes : n, and

the number of blocks : p becomes the number of return blocks : q × α × n × β > the number of blocks : p.

17. A data reproducing processing method for
5   transmitting a data reproducing processing request to nodes connected to a network, and for executing data reproducing processing based on return data, characterized by comprising:
a rule deciding condition setting step for setting
10   data for determining whether the processing according to the processing request is to be executed in a node that receives the data reproducing processing request;
a packet generating step for storing the data for determination set by the rule deciding condition
15   setting step, and for generating a data reproducing processing request packet that stores specifying data of the data for reproducing processing; and
a packet transmitting step for transmitting the packets generated by the packet generating step.
20

18. The data reproducing processing method according to claim 17, characterized in that:
said rule deciding condition setting step executes setting processing for a probability value :
25   β as a description of reproducing rule deciding condition for use in determining whether the processing according to the processing request is to be executed in a node that receives the data reproducing processing request; and
30   said packet generating step executes generation processing for packets that store the probability

value : β as the description of reproducing rule
deciding condition.

19. The data reproducing processing method
according to claim 17, characterized in that:
said data reproducing processing method further
comprises:
a data recovery processing step for executing
de-interleave processing and FEC decoding processing;
wherein said data recovery processing step executes
the de-interleave processing and the FEC decoding
processing for data for reproducing processing
extracted from a packet received from a node that
receives the data reproducing processing request, and
recovers the data.

20. The data reproducing processing method
according to claim 17, characterized in that:
said data for reproducing processing stored in
the node is the data divided into p blocks executed
encoding processing of encoding rate of q/p for
converting into q blocks by applying FEC encoding to
thus generated p blocks; and
said rule deciding condition setting step sets
a probability value : β which causes to return data
with a return probability : β as a description of
reproducing rule deciding condition in a node that
receives the data reproducing processing request, and
sets the probability value : β so that a relation between
the number of return blocks : $q \times \alpha \times n \times \beta$ which is
able to be calculated from a recording probability :

α specified by a recording command apparatus connected to the network, the number of the encoded blocks : q, and the number of network connection nodes : n, and the number of blocks : p becomes the number of return

5   blocks : $q \times \alpha \times n \times \beta$ > the number of blocks : p.

21. A data processing method for analyzing a data processing request received via a data reception unit, and for determining whether the data processing request

10   is to be executed, characterized by comprising:
a rule decision processing step for determining whether data processing based on the data processing request is to be executed; and
a data processing step for executing data

15   processing based on the determination of the rule decision processing step, wherein;
the rule decision processing step determines whether or not the processing according to the processing request is to be executed based on data for

20   determination included in the data processing request received via the data reception unit.

22. The data processing method according to claim 21, characterized in that:

25   said data for determination is a probability value that is a rule deciding condition descriptor included in the data processing request; and
said rule decision processing step determines whether or not the processing according to the

30   processing request is to be executed in accordance with the probability value.

23. The data processing method according to claim 21, characterized in that:

said data for determination is a probability value that is a rule deciding condition descriptor included in the data processing request; and

said rule decision processing step executes random number generation processing, and determines whether or not the processing according to the processing request is to be executed according to a result of comparison between a generated random number and the probability value.

24. The data processing method according to claim 21, characterized in that:

said data for determination is data processing request storing data included in the data processing request; and

said rule decision processing step executes hash value calculation processing based on the data processing request storing data, and determines whether or not processing according to the processing request is to be executed according to a result of comparison between a calculated hash value and a setting value set in its own apparatus in advance.

25. A computer program for transmitting a data recording processing request to a plurality of nodes connected to a network and for executing distributed data recording processing for the plurality of nodes, characterized by comprising:

a rule deciding condition setting step for setting data for determining whether the processing according to the processing request is to be executed in a node that receives the data recording processing request;

5 a packet generating step for storing the data for determination set by the rule deciding condition setting step, and for generating a data recording processing request packet that stores the data for recording processing; and

10 a packet transmitting step for transmitting the packets generated by the packet generating step.

26. A computer program for transmitting a data reproducing processing request to nodes connected to 15 a network and for executing data reproducing processing based on return data, characterized by comprising:

a rule deciding condition setting step for setting data for determining whether the processing according to the processing request is to be executed in a node 20 that receives the data recording processing request;

a packet generating step for storing the data for determination set by the rule deciding condition setting step, and for generating a data reproducing processing request packet that stores specifying data 25 for data for reproducing processing; and

a packet transmitting step for transmitting the packets generated by the packet generating step.

27. A computer program for analyzing a data 30 processing request received via a data reception unit, and for determining whether the data processing request

is to be executed, characterized by comprising:

a rule decision processing step for determining whether the data processing based on the data processing request is to be executed; and

5   a data processing step for executing the data processing based on the determination of the rule decision processing step, wherein;

the rule decision processing step determines whether or not the processing according to the

10   processing request is to be executed based on data for determination included in the data processing request received via the data reception unit.

15